

What is Claimed Is

1. An electrochemical sensor for determining gas components and/or gas concentrations in gas mixtures, having at least one electrode situated on an ion-conducting solid electrolyte body, an electrode lead leading to the electrode, wherein the electrode lead (51) contains a material that possesses no ionic conductivity or an ionic conductivity that is significantly less in comparison with the material of the electrode (50).
2. The electrochemical sensor as recited in Claim 1, wherein the electrode (50) and the electrode lead (51) are each formed from a cermet material; and the essential ceramic components of electrode (50) and electrode lead (51) are different.
3. The electrochemical sensor as recited in Claim 2, wherein the ceramic component of the electrode lead (51) contains 5-10% by volume Al_2O_3 .
4. The electrochemical sensor as recited in Claim 2, wherein the ceramic component of the electrode (50) contains 10-60% by volume, preferably 20% by volume, ZrO_2 stabilized with Y_2O_3 .
5. The electrochemical sensor as recited in Claim 4, wherein at least the electrode (50) has an increased porosity as a result of adding a pore-forming material.
6. The electrochemical sensor as recited in Claim 2, wherein the metallic component of the electrode (50) and/or of the electrode lead (51) contains Pt.
7. The electrochemical sensor as recited in Claim 1, wherein a wedge-shaped junction region (52) having an overlap zone is formed between electrode lead (51) and electrode (50).

8. The electrochemical sensor as recited in Claim 1,
wherein electrode lead (51) and/or electrode (50) is/are situated in a layer plane in
which a heater (55) embedded in the solid electrolyte body is located.
9. The electrochemical sensor as recited in Claim 8,
wherein the heater (55) is made of the same material as the electrode lead (51).
10. The electrochemical sensor as recited in Claim 1,
wherein the electrode (50) is an internal pump electrode (31) and/or a reference
electrode (21) having the corresponding electrode leads (32, 22) of a measuring cell.
11. An electrochemical sensor for determining gas components and/or gas concentrations
in gas mixtures, having at least one electrode situated on an ion-conducting solid
electrolyte body, an electrode lead leading to the electrode,
wherein the electrode lead (51) contains a material having a low resistance in
comparison with the material of the electrode (50).
12. The electrochemical sensor as recited in Claim 11,
wherein the electrode (50) and the electrode lead (51) are each formed from a cermet
material; and the essential ceramic components of electrode (50) and electrode lead
(51) are different.
13. The electrochemical sensor as recited in Claim 12,
wherein the ceramic component of the electrode lead (51) contains 5-10% by volume
 Al_2O_3 .
14. The electrochemical sensor as recited in Claim 12,
wherein the ceramic component of the electrode (50) contains 10-60% by volume,
preferably 20% by volume, ZrO_2 stabilized with Y_2O_3 .
15. The electrochemical sensor as recited in Claim 14,
wherein at least the electrode (50) has an increased porosity as a result of adding a
pore-forming material.

16. The electrochemical sensor as recited in Claim 12,
wherein the metallic component of the electrode (50) and/or of the electrode lead (51)
contains Pt.
17. The electrochemical sensor as recited in Claim 11,
wherein a wedge-shaped junction region (52) having an overlap zone is formed
between electrode lead (51) and electrode (50).
18. The electrochemical sensor as recited in Claim 11,
wherein electrode lead (51) and/or electrode (50) is/are situated in a layer plane in
which a heater (55) embedded in the solid electrolyte body is located.
19. The electrochemical sensor as recited in Claim 18,
wherein the heater (55) is made of the same material as the electrode lead (51).
20. The electrochemical sensor as recited in Claim 11,
wherein the electrode (50), including electrode lead (51), is an external pump
electrode (40) and/or an internal pump electrode (31) having the corresponding
electrode lead (41, 32).
21. An electrochemical sensor for determining gas components and/or gas concentrations
in gas mixtures, having at least one electrode situated on an ion-conducting solid
electrolyte body, an electrode lead leading to the electrode,
wherein the electrode lead (51) contains a material having a low resistance in
comparison with the material of the electrode (50), and also possessing no ionic
conductivity or an ionic conductivity that is significantly less in comparison with the
material of the electrode (50).